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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,347	06/20/2006	Maurits Van Camp	13810-16	6257
45473 7590 01/13/2009 BRINKS, HOFER, GILSON & LIONE P.O. BOX 1340 MORRISVILLE, NC 27560				
EXAMINER				
MC GUTHRY BANKS, TIMA MICHELE				
ART UNIT		PAPER NUMBER		
1793				
MAIL DATE		DELIVERY MODE		
01/13/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/562,347

**Applicant(s)**

VAN CAMP ET AL.

**Examiner**

TIMA M. MCGUTHRY-BANKS

**Art Unit**

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 14-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14-27 and 29 is/are rejected.
- 7) ☒ Claim(s) 28 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date: \_\_\_\_\_

## **DETAILED ACTION**

### ***Status of Claims***

Claims 1-13 are cancelled and Claims 14-29 are new.

### ***Response to Arguments***

Applicant's arguments with respect to the rejection(s) of claim(s) 14-29 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Baldock et al (US 5,282,881).

The indicated allowability of claims 17-29 is withdrawn in view of the newly discovered reference(s) to Baldock et al (US 5,282,881). Rejections based on the newly cited reference(s) follow.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 24 and 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 24 recites the limitation "the Ge fraction in the first fumes" in line 3. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 14, 17, 20, 21, 23, 26, 27 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Baldock et al (US 5,282,881).

Baldock et al anticipates the claimed invention. Baldock et al teaches smelting metallurgical waste materials containing iron compounds and toxic elements (title). The waste material includes Zn and Pb (Claim 20). The waste material is mixed with a reductant under reducing conditions whereby volatilization of heavy metals such as Zn and Pb occurs. Then a fuel and an oxidizing gas are injected to create an oxidizing region. Volatilization of toxic elements occurs (Claim 1). Slag is produced (column 3, lines 34 and 35). The reducing conditions result in iron compounds forming a matte (column 6, lines 32-34). Regarding Claim 17, the Fe is FeO in the slag. Regarding Claim 20, the waste is from leaching calcine (column 1, lines 13 and 14). Regarding Claim 21, silica is used as a flux, which is well known in the art to be acidic (column 5, lines 45-49). Regarding Claim 23, a molten copper solution can be formed with silver and gold (column 4, lines 41-43). Regarding Claim 26, the waste includes Ge (column 3, line 6), and the toxic elements separated during the oxidizing step are recovered

(column 6, lines 55-59). Regarding Claim 27, oxidizing conditions can be established above the melt (column 6, lines 52-56). Regarding Claim 29, the figure shows a submerged lance (see also column 3, line 48).

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 15, 16, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baldock et al.

Baldock et al does not disclose the amount of Fe that is in the slag. Since Baldock et al teaches that the process can produce a metal phase as an alternative, than it would have been obvious to one of ordinary skill in the art at the time the invention was made to expect that only a slag phase is the other alternative. Therefore, the claimed FeO ranges are within that of the disclosure of Baldock et al. Additionally, in the case where the claimed ranges overlap or lie inside ranges disclosed by the prior art, a *prima facie* case of obviousness exists. See MPEP § 2144.05.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Baldock et al as applied to claims 14 and 17 above, and further in view of Dvorak et al (US 5,282,881).

Baldock et al discloses the invention substantially as claimed. However, Baldock et al does not disclose both a mixture of an acidic and basic flux as claimed. Dvork et al teaches a flux with both acidic (SiO<sub>2</sub>) and basic (CaO) components (Claim 1). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the flux composition

of Dvork et al in the process of Baldock et al, since Dvork et al teaches that this slag composition improves slag fluidity (column 2, line 45).

### ***Allowable Subject Matter***

Claims 24 and 25 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claim 28 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Regarding Claims 24 and 25, Baldock et al does not disclose or suggest separating and forwarding a Ge fraction in the first fumes to the oxidizing step as claimed. Baldock et al suggests that Ge is recovered in the molten phase such as copper. Regarding Claim 28, Baldock et al teaches using only one furnace and does not disclose or suggest a multiple hearth furnace as claimed.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TIMA M. MCGUTHRY-BANKS whose telephone number is (571)272-2744. The examiner can normally be reached on M-F 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/  
Supervisory Patent Examiner, Art Unit  
1793

/T. M. M./  
Examiner, Art Unit 1793  
13 January 2009